

SIEMENS

PATENT
Attorney Docket No. 2003P17895WOUS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Inventor:	H. Adolf et al.)	Group Art Unit:	2834
)		
Serial No.:	10/589,176)	Examiner:	Gonzales Quinones, J. A.
)		
Filed:	05/24/2007)	Confirmation No.	5892

Title: **SALIENT-POLE MACHINE COMPRISING AT LEAST ONE
FIELD COIL**

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Commissioner For Patents
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Alexandria, VA 22313-1450
COMMISSIONER FOR PATENTS

APPELLANTS' BRIEF UNDER 37 CFR 41.37

Sir:

This brief is in furtherance of the Notice of Appeal filed in this application on 23 July
2010.

(Please proceed to the following page.)

1. REAL PARTY IN INTEREST - 37 CFR 41.37(c)(1)(i)

The real party in interest in this Appeal is the assignee of the present application, Siemens Aktiengesellschaft.

2. RELATED APPEALS AND INTERFERENCES - 37 CFR 41.37(c)(1)(ii)

There is no other appeal, interference or judicial proceeding that is related to or that will directly affect, or that will be directly affected by, or that will have a bearing on the Board's decision in this Appeal.

3. STATUS OF CLAIMS - 37 CFR 41.37(c)(1)(iii)

Claims cancelled: 1 – 14, 16, 18, 22 - 29.

Claims withdrawn but not cancelled: None.

Claims pending: 15, 17, 19, 20, 21.

Claims allowed: none.

Claims rejected: 15, 17, 19, 20, 21.

The claims on appeal are 15, 17, 19, 20 and 21. A copy of the claims on appeal is attached hereto in the Claims Appendix.

4. STATUS OF AMENDMENTS - 37 CFR 41.37(c)(1)(iv)

Appellants submitted an amendment under Rule 116 on 24 May 2010 in response to the final office action mailed 25 February 2010 in order to seek allowance or reduce issues in this appeal by placing the limitations of dependent claim 19 into independent claim 15. In the Advisory Action mailed 19 July 2010, entry of that proposed amendment was refused.

5. SUMMARY OF THE CLAIMED SUBJECT MATTER- 37 CFR 41.37(c)(1)(v)

With reference by page and line number to the detailed description, and with reference to the figures, the following summary describes one or more exemplary embodiments disclosed in the Specification and which are covered by one or more specific claims, but it is to be understood that the claims are not so limited in scope.

5.A. CONCISE EXPLANATION OF SUBJECT MATTER DEFINED IN INDEPENDENT CLAIM 15.

With reference to Figures 1 and 2, **independent claim 15** is directed to a salient-pole machine. Page 2, lines 9 - 11. A rotor body 12, e.g., of a generator, extends in an axial direction of the machine. Page 5, lines 1 - 3 and 7 - 9. A pole shoe 14 is arranged on the rotor body 10 (page 5, lines 1 - 3) and includes an air outlet opening 38 (connected to receive air from a cooling channel 36). Page 6, lines 5 - 14. A field coil 18 is arranged between the rotor body 12 and the pole shoe 14.

A leaf spring 24 is arranged between the field coil 18 and the rotor body 12. The leaf spring 24 forces the field coil 18 against the pole shoe 14 by exertion of a spring force against the field coil 18. The leaf spring has a hollow cross section (opening 30) with an interior portion arranged between the field coil 18 and the rotor body 12. See page 5, lines 7 - 13.

The leaf spring 24 has an essentially U-shaped cross section having two limblike extensions (spring arms 26, 28) positioned so that the field coil 18 is forced against the pole shoe 14 by one of two limbs (spring arms 26, 28). Page 5, lines 15 - 20. An axis of the spring cross section is parallel to the rotor axis. Page 5, lines 15 - 16 and 25 - 26. The interior of the hollow leaf spring 24 forms an axial cooling channel 34 of the machine. Page 5, lines 25 - 30. Thus the field coil 18 includes a radial cooling channel 36 extending from the axial cooling channel 34 to the air outlet opening 38. Page 5, lines 26 - 30; page 6, lines 5 - 14. , The radial cooling channel 36 extends radially outward with respect to the axial direction of the rotor body. page 6, lines 9 - 14.

The radial cooling channel 36 is in connection with the axial cooling channel 34 to allow flow of a cooling medium from the axial cooling channel 34 and through the radial cooling channel 36 and through the air outlet opening 38 of the pole shoe 14. See, again, page 6, lines 5 - 14.

CONCISE EXPLANATION OF SUBJECT MATTER DEFINED IN DEPENDENT CLAIM 19.

Claim 19 depends from claim 17 which depends from claim 15, described above. Claims 17 and 19 further limit the claimed subject matter to include embodiments in which:

(from claim 17) the spring 24 has two essentially U-shaped sections 26, 28 which partially overlap to form essentially an O-shape having an opening at one point. See page 3, lines 8 - 12 and page 5, lines 19 - 23; and

(from claim 19) the spring 24 is fixed to the rotor body 12 by a fixing device (e.g., a bolt) 32 on a side of the O-shaped spring opposite the opening in the spring. Page 5, lines 20 - 23.

6. GROUNDS OF REJECTION TO BE REVIEWED UPON APPEAL - 37 CFR 41.37(c)(1)(vi)

1. Whether claims 15, 17 and 19 are unpatentable under 35 U.S.C. Section 103 over Horikiri (JP 11069681) in view of Kibe (JP2002058188); and

2. Whether claims 20 and 21 are unpatentable under 35 U.S.C. Section 103 over Horikiri in view of Kibe and in further view of Segawa (PG Pub 2004/0163879 A1).

7. ARGUMENT 37 CFR 41.37(c)(1)(vii)

7.1 As to the rejection of claims 15 and 17 under 35 U.S.C. Section 103 over Horikiri (JP 11069681) in view of Kibe (JP2002058188):

Appellant offers no argument as to claims 15 and 17. The Appellant expects the Board to affirm the Examiner in part as to the rejection of these claims.

7.2 As to the rejection of claim 19 under 35 U.S.C. Section 103 over Horikiri (JP 11069681) in view of Kibe (JP2002058188):

In order to sustain the rejections under Section 103, MPEP §2143 provides that three criteria must be met to establish a prima facie case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one skilled in the art, to modify the reference or to combine teachings of the references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest **all** of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be both found in the prior art and not in the applicant's disclosure.

Appellant submits that the art rejection does not and cannot identify every feature of dependent claim 19. The following discussion illustrates how the rejection fails to identify a key feature recited in claim 19 which constitutes a fatal deficiency in the rejection of claim 19.

Claim 19 requires that:

the spring has two essentially U-shaped sections which partially overlap to form essentially an O-shape having an opening at one point (from claim 17)

and that

the spring is fixed to the rotor body by a fixing device on a side of the O-shaped spring opposite the opening in the spring. (from claim 19)

The final office action rejected claim 19 by concluding that these limitations are present in the Horikiri reference. Applicants respectfully disagree. The Kibe reference shows a bolt passing through a ventilation flue 23 per Fig. 2. The Horikiri reference discloses a bolt 11 passing through the interior portion of a hollow spring element per Fig. 3. See page 3 of the final office action.

However, as best understood, the Horikiri reference discloses a different arrangement from claim 19 where two separate and spaced-apart “C character-like flat springs” are not fixed and do not overlap one another. In fact, according to the disclosures of Horikari and Kibe, a non-obvious reconstruction of the prior art would be required to meet the terms of claim 19.

This is because the bolt 11 shown in the Horikari reference is not shown to **attach** either of the two C character **springs to a rotor body**. Rather, the springs of Horikari appear to be floating. A second reason the claimed subject matter is non-obvious over the combination is that the bolt 11 extends through the space in which the two C character springs are placed and therefore imposes an obstruction to the cooling channel. In contrast to this, the language of claim 19 positions the “fixing device on a **side** of the O-shaped spring opposite the opening in the spring” instead of through appellants’ “hollow cross section” of the spring, i.e., in what provides the recited “axial cooling channel.”

Because the bolt 11 of Horikari is not shown to attach either of the two C character springs to a rotor body the claimed subject matter is non-obvious. Claim 19 is also non-obvious because the prior art bolt 11 extends through the space in which the two C character springs are placed, forming an obstruction in a cooling channel, and it cannot be said that there would be any resulting cooling advantage in any resulting prior art axial cooling channel which would motivate one skilled in the art to combine the references. Nor is there any teaching to reconstruct the prior art.

For these reasons it is urged that:

(1) it is not obvious to combine the Horikari and Kibe references to meet the terms of the claims and

(2) there is no motivation which would lead to the requisite reconstruction of the prior art in order to achieve the claimed invention. Claim 19 is patentably distinguished over the prior art.

For at least these reasons it is submitted that the rejection of claim 19 should be overturned.

7.3 As to the rejection of claims 20 and 21 under 35 U.S.C. Section 103 over Horikiri (JP 11069681) in view of Kibe (JP2002058188) and in further view of Segawa:

Claims 20 and 21, which depend from claim 19, shall rise or fall with the disposition of claim 19.

7.4 Conclusion

Argument has been presented to demonstrate that the rejection of claim 19 under Section 103 is deficient. The Examiner has argued for rejection when claimed features are not obtainable from the prior art. For the reasons presented, there cannot be a prima facie case of obviousness and the rejection of claim 19 cannot be sustained. The rejection of claims 19, 20 and 21 should be reversed.

8. APPENDICES

An appendix containing a copy of the claims involved in this appeal is provided herewith. No evidence appendix or related proceedings appendix is provided because no such evidence or related proceeding is applicable to this appeal.

Respectfully submitted,

Dated: Sep 22, 2008

By: Janet D. Hood
Janet D. Hood
Registration No. 61,142
(407) 736-4234

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, New Jersey 08830

9. APPENDIX OF CLAIMS ON APPEAL

15. A salient-pole machine, comprising:
a rotor body that extends in an axial direction of the machine;
a pole shoe arranged on the rotor body and including an air outlet opening;
a field coil arranged between the rotor body and the pole shoe; and
a leaf spring arranged between the field coil and the rotor body that forces the field coil against the pole shoe by exertion of a spring force against the field coil, the spring having a hollow cross section with an interior portion arranged between the field coil and the rotor body,
wherein the spring has an essentially U-shaped cross section having two limblike extensions positioned so that the field coil is forced against the pole shoe by one of the two limbs,
wherein an axis of the spring cross section is parallel to the rotor axis, the interior portion of the hollow spring element forms an axial cooling channel of the machine, the field coil includes a radial cooling channel extending from the axial cooling channel to the air outlet opening, with the radial cooling channel extending radially outward with respect to the axial direction of the rotor body, and
wherein the radial cooling channel is in connection with the axial cooling channel to allow flow of a cooling medium from the axial cooling channel and through the radial cooling channel and through the air outlet opening of the pole shoe.

17. The salient-pole machine as claimed in claim 15, wherein the spring has two essentially U-shaped sections which partially overlap to form essentially an O-shape having an opening at one point.

19. The salient-pole machine as claimed in claim 17, wherein the spring is fixed to the rotor body by a fixing device on a side of the O-shaped spring opposite the opening in the spring.

20. The salient-pole machine as claimed in claim 19, wherein the spring has a spring stiffness of between approximately 1 and 4 N/mm.

21. The salient-pole machine as claimed in claim 20, wherein the spring has a spring stiffness of between approximately 2 and 3 N/mm.

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10. EVIDENCE APPENDIX - 37 CFR 41.37(c) (1) (ix)

None

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11. RELATED PROCEEDINGS APPENDIX - 37 CFR 41.37(c) (1) (x)

None